

# Consideration of Proposed Sediment Quality Provisions for Enclosed Bays and Estuaries

June 5, 2018 – Item 8

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# Overview

## *2018 Proposal to State Water Board that includes*

- *Revised assessment framework that would implement the sediment quality objective (SQO) protecting human consumers from contaminants that bioaccumulate into fish tissue from sediment*
- *Revised implementation strategy for listing impaired water bodies under the aquatic life SQO*

# Background

- ***2008 State Water Board approved Enclosed Bays and Estuaries Plan that included***
  - *Aquatic life sediment quality objective and assessment framework based on multiple lines of evidence*
  - *Human health sediment quality objective that relied on general risk assessment methodology for implementation*
- ***2012 State Water Board directed staff to revise assessment framework for the human health SQO***
  - *SCCWRP Scientists led technical team*
  - *Scientific Steering Committee providing oversight*
  - *Advisory Committee provided stakeholder input*

# Human Health SQO

## *Narrative SQO*

*“Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health in bays and estuaries of California. “*

# Tiered Assessment Framework

- **Multiple tiers**

- Data requirements and complexity relate to situation
- Reduced effort/cost for sites of low concern



## **Tier 1: Screening**

**Low Data Requirements  
Conservative Assumptions**



## **Tier 2: Site Assessment**

**More Data Required  
Standardized Assessment**

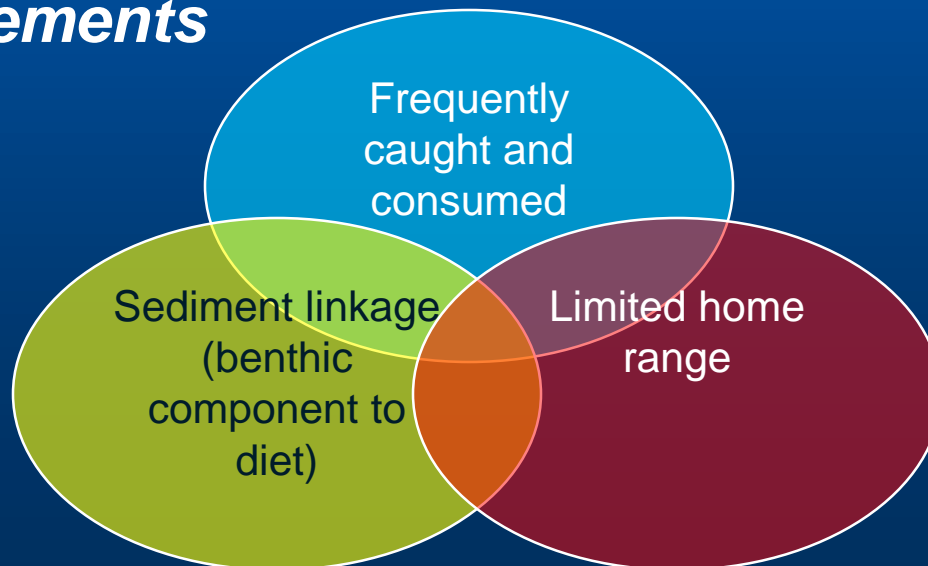


## **Tier 3: Refined Assessment**

**More Complex Situations  
Evaluate Management Options**

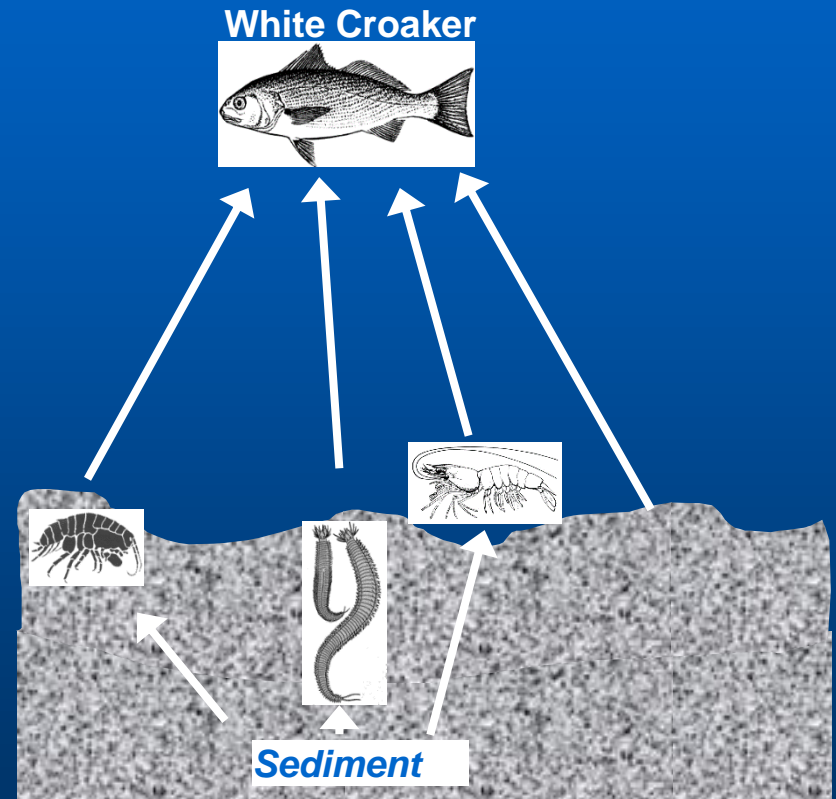
# Fish Species

- ***Concentrations in fish tissue play a major role in the assessment framework***
  - *Indicator of human exposure*
  - *Indicator of bioaccumulation from all sources*
    - *Our interest is contribution from site sediment*
- ***Species have been selected to fulfill multiple requirements***



# Site Linkage

- Evaluates proportion of fish tissue contamination due to site sediment
- Linkage = 
$$\frac{\text{estimated fish concentration}}{\text{measured fish concentration}}$$
- Estimated tissue concentration
  - Food web bioaccumulation model
- Measured tissue concentration
  - Monitoring data
  - Nine priority species



# Assessment Matrix

Site Linkage	Chemical Exposure				
	Very Low	Low	Moderate	High	Very High
	Very Low	U	U	LU	LU
	Low	U	U	LU	PI
	Moderate	U	LU	LI	LI
	High	U	LU	LI	CI

- **Meet SQO: Unimpacted (U) or Likely Unimpacted (LU)**
- **Fail SQO: Possibly Impacted (PI), Likely Impacted (LI), Clearly Impacted (CI)**



# Changes Proposed for Implementation of Aquatic Life SQO: 303(d) listing criteria

- **Proposed approach considers both spatial extent and magnitude:**
  - Any station classified as Clearly Impacted or
  - 15% or more of site are classified as Possibly or Likely Impacted
- **Spatially representative data required**

# Technical and Policy Related Outreach

- **Scientific Steering Committee**

- Dr. Peter Landrum, Chair: Research Chemist (Retired) NOAA
- Dr. Donna Vorhees, Human Health Risk Assessment, Consultant
- Dr. James Shine, Harvard School of Public Health
- Dr. Charles Menzie, Principal Scientist, Consultant
- Dr. Rob Burgess, Research Scientist, EPA's ORD
- Dr. Todd Bridges, Center for Contaminated Sediments, USACE
- Mr. Tom Gries, Acting Agency QA Officer, Washington Dept. of Ecology
- Dr. Bruce Hope, Senior Environmental Toxicologist, Consultant

- **SQO Advisory Committee - Brock Bernstein, Chair**

- **Technical Team and Partners**

- Steve Bay, Dr. Ashley Parks (SCCWRP)
- Dr. Bob Brodberg (retired) and Dr. Susan Glasing (OEHHA)
- Dr. Ben Greenfield (SFEI)

- **Greater Harbors Toxics TMDL**

- Los Angeles Regional Board staff
- Ports of Los Angeles and Long Beach

# Public Process

- **December 5, 2017 Public Hearing**
  - Presentation Panel: Los Angeles Regional Water Board, Ports of Los Angeles and Long Beach, Southern California Coastal Water Research Project
  - Public comments: San Francisco Baykeeper concerned about implementation
- **Comment Period: 10/24/17 - 12/14/17) Eleven letters received**
  - Clarification of Site Linkage Thresholds. **Changes made**
  - Provide greater clarity and text cleanup. **Changes made**
  - Support for the proposed assessment framework for human health and use of OEHHA based tissue thresholds. **No Change**
  - Site category designation and use of Possibly Impacted category as being impacted. **No Change**
  - Opposition to a Spatial Extent Threshold of 15% by Area. **No Change**
  - **Opposition to the "Grandfathering": waterbodies with existing TMDLs not required to reassess with the new SQO framework. This approach was opposed by four organizations. No Change**

# Focused “Grandfathering” Language

Implementation provisions described in Chapter IV.A.2 and applicable provisions in Chapter IV.A.4 implementing the objective set forth in Chapter III.A.2.b. below do not apply to dischargers that discharge to receiving waters for which a total maximum daily load (TMDL) has been established, on or before the effective date of the Sediment Quality Provisions, to address the bioaccumulation of organochlorine pesticide or polychlorinated biphenyls from sediment into sportfish tissue within enclosed bays and estuaries unless the applicable Regional Water Board approves the application of such provisions.

# Scientific Peer Review

- Peer review was completed on March 22, 2018.
  - Expertise in chemical fate and transport models
  - Expertise in fish biology and ecology
  - Expertise in Public Health and Human Health Risk Assessment
- Reviewers were asked to review specific conclusions that provide the scientific basis for the proposed provisions
  - In general, reviewers agreed with the conceptual approach and assessment methods, and identified minimal edits to the proposed SQO Amendments and draft Staff Report. Issues identified by the reviewers were:
    - The limited group of contaminants (chlorinated pesticides and PCBs) addressed within the assessment framework. **No Change**
    - The use of the maximum concentration when less than three samples are used to characterize a site. **Changes made**
    - Clarifying comments and edits to staff report and proposed provisions **Changes made**

# Thank you

**Chris Beegan – Division of Water Quality**

**Steve Bay – Southern California Coastal Water Research Project**

**Annalisa Kihara – Division of Water Quality**

**Marleigh Wood – Office of Chief Counsel**



**Brock Bernstein**